REMARKS

The present Amendment and Response is believed to be fully responsive to the Office Action mailed February 17, 2009. The Amendment and Response is being submitted in conjunction with a Declaration Pursuant to 37 C.F.R. § 1.132, a Petition for a Three Month Extension of Time, and the appropriate fees. Claims 1-2, and 4-20 are pending in the application and are under rejection. Dependent Claim 3 was cancelled without prejudice by prior response. By this Amendment, independent Claims 1, 6, 10, and 15 and dependent claims 12 and 20 have been amended. It is respectfully asserted that no new matter has been added by the foregoing amendments. Reconsideration of the application is requested in view of the following remarks.

Applicant appreciates courtesies extended by Supervisor Edward Coles and Examiner Thierry L. Pham to Applicant's representatives Lawrence A. White, Chief Technical Operator at Archaio, LLC, Troy DeBraal, Director of Product Development at Archaio, LLC and Attorney Libby Babu Varghese during a personal interview held on July 20, 2009. Archaio, LLC is the assignee of the pending patent application. Prior to the interview, a proposed amendment was submitted to the Examiner for review.

In this interview, Applicant gave a three-part computer demonstration showing 1) a generic, simple prior art digital raster image without scale information embedded therein, 2) a generic computer-aided design (CAD) program and 3) the invention of the present invention. In the first part of the demonstration, the digital raster image was able to be viewed, but there was no capacity available to instantly interpret the drawings by calculating a true scale measurement, other than by zooming into the image and deciphering the text or call out measurements associated with a line. The digital raster viewer provides tools to draw however the drawn line provides no information related to that drawn line. Measurement information can only be attained from the prior art digital raster image and viewer by first manually setting the scale.

In the second part of the demonstration, a digital raster image was pre-imported into a CAD program and, using CAD drawing tools, a line was drawn parallel to a digital raster image line that had a call-out measurement value associated therewith. The measurement calculated for the drawn-line was inaccurate as it did not equal the call-out

measurement shown on the raster image for the digital raster image line. The inaccuracy of the measurement is attributed to the fact that the CAD program resorted to the default scale part of the CAD program as scale was not keyed-in prior to the line being drawn. Thus, in order to obtain accurate measurements, the user would have to key-in the scale into the CAD program.

The final part of the demonstration showed the invention of the present application. Here, a line was drawn parallel to a digital raster image line having a call-out measurement associated therewith. The measurement calculated by the present invention was accurate as it equaled the measurement shown in the call-out on the digital raster image.

Applicant then proceeded to present arguments distinguishing the presently amended claims from the cited prior art references and discussed the proposed amendments to the claims that better defined the invention and highlighted the distinguishing features of this invention over the prior art. In particular, Applicant argued how the Examiner's proposed combination of the prior art would change the principle of operation of the prior art invention being modified. Applicant also argued that the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose. Applicant further argued that the cited motivation did not provide an articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. Finally, Applicant argued that the prior art references lacked elements claimed by the pending application.

I. REJECTIONS UNDER 35 U.S.C. § 103

In the pending Non-final Office Action, Claims 1-2, and 4-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,134,338 to Solberg et al. (hereinafter "Solberg") in view of U.S. Patent Publication No. 2002/0077787 to Rappaport et al. (hereinafter "Rappaport"). Specifically, the Office Action contends that Solberg discloses a method for providing actual scale information of a digital image. The Office Action recognizes that Solberg fails to teach or suggest embedding the scale information in a header of a digital raster image; however, the Office Action contends that Rappaport teaches this element.

Although it is believed that the previously presented claims are allowable over the cited art references, in order to expedite the allowance of the present patent application, independent Claims 1, 6, 10, and 15 have been amended to clarify the claimed inventions set forth in the independent claims. Specifically, independent Claim 1 has been amended to recite "embedding the scale information in a dedicated location of a header of the digital raster image" (Underlining supplied). Independent Claims 6, 10, and 15 have been amended in a similar manner. Ancillary support for these amendments may be found at least on page 8 of the Specification as filed (paragraphs [0035] – [0043] of the Specification as published).

Independent Claims 1, 6 and 10 have also been amended to explicitly state that the digital raster image is stored as a single file with the scale information being embedded in the dedicated location of the header of that single digital raster image file. Furthermore, Independent Claims 1, 6, 10 and 15 have been amended to define that the true scale measurement is calculated, in part, using the scale information embedded in the dedicated location. Support for these amendments may be found in paragraphs [0035] – [0043] and [0048]-[0069] of the Specification as published. Claim 20 was amended to better clarify the claim.

The proper analysis in determining obviousness is whether the claimed invention would have been obvious to one of ordinary skill in the art after consideration of all the facts. (See 35 U.S.C. §103). The key to supporting any rejection under 35 U.S.C. §103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at ___ , 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval). See MPEP 2141.

Applicant respectfully submits the Examiner has failed to provide an articulated

reasoning with some rational underpinning to support the legal conclusion of obviousness. This is because the prior art references lacked elements claimed by the pending application and the proposed combination of the prior art would change the principle of operation of the prior art invention being modified. Also, Applicant respectfully submits that the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose.

Furthermore Applicant submits that neither Solberg nor Rappaport, either taken alone or in combination, teach or suggest each and every element of amended independent Claims 1, 6, 10, and 15. Specifically, neither Solberg nor Rappaport teach or suggest "embedding the scale information in a dedicated location of a header of the digital raster image," "storing the digitized raster image as a single file, wherein said embedded scale information is embedded in said dedicated location of said header of said single file" and "calculating a true scale measurement of the drawn line or shape based at least in part on the embedded scale information in said dedicated location of said header of said single file." (Underlining supplied).

Applicant affirms the arguments presented in the responses to the previous Office Actions. Applicant herein below present arguments in response to the Non-final Office Action mailed February 17, 2009. The following section explains why the applied prior art does not render obvious the subject matter defined by the presently amended claims when considered singly or in combination.

It is estimated that approximately 85% of the world's infrastructure plans, such as architectural, mechanical, structural, and electrical diagrams, are currently stored in paper format only. The digitizing of paper infrastructure plans into a raster image, known as raster files, is recognized for providing the benefit of being good for archiving, printing and sharing. (See Exhibit B and Exhibit C.) However, despite the benefits of raster files and the fact that raster files are non-proprietary, the industry largely only utilizes raster files for archiving or transferring because making considerable modifications to raster files are found to be tedious. (See Exhibit C.) See ¶8 of the 37 CFR §1.132 Declaration of Lawrence A. White filed concurrently herewith ("132 Dec."). (See *Curriculum Vitae* of Lawrence A. White, Exhibit A.)

At and around the time of the creation of the Patent Application, the industry concentrated on converting or transforming raster files for use with computer-aided design (CAD) programs as CAD has the known ability to precisely describe, create, scale and manipulate individual objects. (See Exhibit C and Exhibit D: "[v]ector files can be scaled, which means one can zoom in on the details of a drawing. Also, they are more easily edited than raster files.") See ¶9 of 132 Dec.

Again despite the benefits of raster files, the industry clearly diverged or taught away from using raster files for reasons other than archiving, printing, sharing or making minor modifications. (See for instance Exhibit C and Exhibit B which finds that "[r]aster images can only be edited by adjusting the values of individual dots.") The industry deemed that vectors could be made to be mathematically perfect, while rasters could not. (See Exhibit C.) Thus, CAD was understood to be the standard in technical drafting notwithstanding the fact that CAD programs typically utilize their own propriety format and therefore are often non-transferable between different systems and programs. (See Exhibit H.) Another problem with CAD programs, such as and including Solberg, is the fact that scale information is stored in external library files. If the library file is not available or if the library file becomes corrupted, the scale information may be unavailable when a raster file is accessed. See ¶10 of 132 Dec.

The inventor of the Patent Application however recognized a clear, unaddressed, and long felt need for developing non-proprietary systems and methods to electronically store infrastructure plans in an accurate, scaled and secure manner, and share infrastructure plans with data integrity. See ¶11 of 132 Dec.

Traditionally when paper plans are scanned and digitized for electronic storage, the images original physical size, and therefore the corresponding usefulness of the image scale, of a particular document is no longer a concrete attribute of the image. For example, if a paper version of an infrastructure plan is thirty inches in height and forty inches in width and then scanned, a computer user of that scanned electronic image would see the document as a different physical size when using different monitors depending on the size of the display device and its own pixel resolution. Thus, the scale that appears on the document (e.g., one eighth inch equals one foot, etc.) will be incorrect

when an electronic depiction of the document is displayed on a computer monitor. This is because the original physical size of a paper image has no direct correlation to the pixel dimensions of a computer monitor. As a result, a 20 inch wide monitor can only display an image as twenty inches wide if viewing the whole image and a twenty-five inch wide monitor can only display an image as twenty-five inches wide if viewing the whole image. Also, neither monitor would be able to display the whole image as it originally appeared, that is, as a forty inch wide image. The user has no way to know what the original physical size of the paper drawing was, yet the scale ratio of the image listed on the plan is directly tied to the physical size of the original paper document. So if a computer user viewing the scanned infrastructure plan on a twenty-five inch monitor tried to take a physical measurement of the image on the computer monitor using that data with the image scale to manually compute a true scale measurement the result would be a wrong measurement value. Furthermore zooming the image so that only portions of the original image appear on the computer monitor also distorts the physical size of the image making any physical measurement of an image or image element not useful when combined with scale to calculate a true scale dimension measurement. In essence, once a paper drawing is scanned, the scale information on that drawing is no longer valid and accurate when a digital version of the paper drawing is viewed on a monitor or display device. See ¶12 of 132 Dec.

In response to the long felt need for systems and methods to electronically store infrastructure plans while maintaining true and accurate scale information and the need to permanently secure scale to digitized plans, the inventor of the Patent Application embeds scale information in a header of a digitized raster image of an infrastructure plan. The inventor of the Patent Application employs a specific private Tagged Information File Format (TIFF) header tag from Adobe Systems to store scale information. See ¶13 of 132 Dec.

This private header tag is a dedicated location that permits scale information to be secured indefinitely within a header of a raster image. As a result of embedding the scale information within the header of a raster file, the digital raster image and all the data needed to calculate dimension measurement data at a future time can be stored as a single file. Also, as there are hundreds and thousands of tags the embedding of scale

information in the dedicated location permits quick and easy access to such scale information rather than having to unnecessarily delve through the thousands of tags in the TIFF header. See ¶14 of 132 Dec.

The act of embedding scale information within a header of the digital raster image, using the dedicated private header tags and storing the digital raster image as a single file are important aspects of the Patent Application . See ¶15 of 132 Dec.

The Patent Application, by way of these important aspects, provides a raster file that secures the scale information to the single digital raster image as it is known that integrity of a single raster file can better maintained than that of multiple raster files, which easily disassociate from one another. Also, the Patent Application prevents scale information that is embedded in the header of a raster image from being lost or overwritten as it is known that the information stored in a raster header location is lost or overwritten much less than the data kept in the main body of a file. Further, raster images are by their nature not able to store data other than pixel data in the main body of the electronic file. See ¶16 of 132 Dec.

The file of the Patent Application can be easily transferred between different systems and software programs and stored to be readily available for subsequent access. See ¶17 of 132 Dec.

The file of the Patent Application can also be quickly opened and the embedded scale information quickly accessed in order to determine true scale measurement information upon subsequent access of the digitized raster file. See ¶18 of 132 Dec.

For example, an architectural drawing may be converted to a digitized raster file and scale information can be embedded in the header of the digitized raster file. Once the digitized raster file is rendered, a user may draw a line or shape in the rendered architectural drawing, and true scale measurements for the drawn line or shape (e.g., distance or area) may be determined utilizing the embedded scale information. See ¶19 of 132 Dec.

By creating the single digital raster image file with scale embedded in the dedicated location of the header of the single file, the inventor of the Patent Application provides a non-proprietary electronic file format that is readily available for use by a wide variety of different individuals. Users of the Patent Application are not required to

be familiar with sophisticated software programs and products, such as computer-aided design (CAD) programs and products. Thus, unskilled users may be able to quickly and efficiently utilize the claimed invention with ease. See ¶20 of 132 Dec.

A wide variety of dimension data can be calculated using only the raster image with the scale data embedded in the raster image header. By using the present Patent Application, measurements can be calculated from input that is not previously prescribed. For instance, a line can be drawn on a raster image from the middle of a wall in a room to any other point in the room and a true scale measurement of the drawn line can be obtained using the scale embedded in the dedicated location of the digital raster image. These non-prescribed measurement values are not listed on the original image as it would be impossible to list all possible element measurements and combination of element measurements on a paper drawing image. See ¶21 of 132 Dec.

II. THE SOLBERG REFERENCE ALONE OR COMBINED WITH THE RAPPAPORT REFERENCE DOES NOT RENDER OBVIOUS CLAIMS 1-2, 4-20.

A. The Solberg Patent Fails To Teach Claimed Elements

Solberg discloses a CAD program that utilizes raster files as intermediate files in the creation of a complex CAD file. (See Solberg Col. 22, lines 63-65). Specifically, Solberg scans a paper document and stores pieces of the original paper document as multiple raster files that are then transformed into a CAD file, a second, associated, but clearly distinguishable electronic file entity. (See Fig. 2, Steps 3.3 and 3.4, Col. 25, lines 3-7 and Fig. 4 Col. 26, lines 15-25.) Solberg's invention is designed to automate the transfer of 2D raster image data concerning real world objects into mathematically accurate 3D vector models. (See Solberg Abstract and Col. 40 lines 6-14). See ¶23 of 132 Dec.

Applicant agrees with the statement in the Office Action finding that Solberg does not teach embedding scale in the header of a digital raster image. As mentioned above, CAD programs, such as and including Solberg, preserve scale information in an external library file, which if corrupted or separated from the raster file will result in the loss of the scale information. Scale information may also be read from a scanned document utilizing optical character recognition techniques or keyed in upon prompting, however

again the scale information is not embedded in a raster image. See Solberg col. 14, lines 25-54, col. 19 line 45 to col. 20, line 8 and Col. 16 lines 36- col. 17 line 16). Furthermore, in view of the presently submitted claims, Applicant asserts that Solberg does not teach embedding scale in a dedicated location of a header of a digital raster image. See ¶24 of 132 Dec.

Solberg also does not teach storing the digital raster image as a single file with scale embedded in the header of the single digital raster image file as set forth in presently submitted claims. The Patent Application preserves the original raster bitmap format as a single document and simultaneously preserves scale. In contrast, Solberg teaches the creation of a plurality of viewpoints raster files and discloses creating a separate raster file, a floating viewpoint 242 that contains scale 187. (Solberg col. 18 line 61- col. 20 line 14.) This scale information is a separate and distinct raster file from the raster file(s) used to store the plurality of viewpoints 122. (See col. 14, lines 25-54 and col. 19 line 45 to col. 20, line 8). See ¶25 of 132 Dec.

Solberg fails to teach associating scale with raster files, rather Solberg teaches associating scale with a CAD file. After a CAD viewport is selected in steps 3.1-3.2, the AUTOCAD program prompts the user for the drawing scale in step 3.3 and then later the raster file is imported into the AUTOCAD program (See Solberg Col. 25, lines 9-14). Clearly the scale has not been set for the raster file as it had yet to be imported. Scale may also be read from the alphanumeric text representing scale information on the face of the raster image once in the CAD program. (See Solberg at Col. 16 lines 36- col. 17 line 16.) Thus, Solberg is not associating scale with a raster image and not embedding scale in a dedicated location of a header of a single raster image. See ¶26 of 132 Dec.

Furthermore, Solberg does not teach calculating a true scale measurement of a drawn line or shape based at least in part on the embedded scale information in said dedicated location of said header of said single file. Solberg instead teaches converting hard copy drawings into mathematically accurate vectors corresponding to physical dimension and edges of 3D objects and moiety that symbols represent. (Abstract, col. 13 lines 40-45). The result of Solberg is to use the vector file as a 3D computer model of the 3D object and the moiety represented by symbol. (Col. 40, lines 6-14.) Also, the mathematically accurate AUTOCAD drawing file may be printed to create a new hard

copy of the newly created converted engineering drawing. (Solberg col. 57 lines 1-15.) See ¶27 of 132 Dec.

Solberg's creation of mathematically accurate vectors traced over a previously drawn line does not teach the calculation of a true scale measurement of drawing input. (See Solberg Step 6.) Solberg simply correlates dimension information to a shape. This dimension data that is associated with a line is accessed from the CAD library file for display. Thus, Solberg is neither accessing scale data from a header of a raster image nor utilizing scale data stored in the header to calculate a true scale measurement of a drawn line or shape. It is understood that the measurements displayed by Solberg are limited to the prescribed dimensions shown on the face of the image. See ¶28 of 132 Dec.

B. The Rappaport Reference Fails To Teach Claimed Elements

Rappaport looks to provide an admittedly non-scaled contextual map for the association of external device or tool collected metric data wherein the metric data may be visually interpreted and associated against the image back drop of the spatial environment it describes. (Rappaport abstract, [0025] and [0075].) Rappaport is designed as a means to store measured network performance where measurement reading is associated with some textual or graphical identifier to enable easy inspection or analysis of data by anyone especially by a less-technical or untrained individual. (Rappaport [0069].) See ¶29 of 132 Dec.

The Office Action asserts that Rappaport teaches embedding information in a header of a digital raster image. Although Rappaport teaches the known concept of storing file-identifying information in the header of a file such information is metadata or generic information. Metadata is descriptive data about data retained within the body of the computer file. See Exhibits E, F and G. It is a key component of data lineage as it provides basic information about the source and derivation of a data set. See Exhibit F. Metadata includes information that describes file content such as a file name or a file type; quality; condition and other appropriate characteristics of the data. Metadata provides the necessary information for an application to "recognize" and "understand" the file, see Exhibit E, and also, this type of information is used "to properly transmit" a file. (Rappaport [0095] and [0010].) See ¶30 of 132 Dec.

In contrast to the known concept of inserting file-identifying information (file

name, date, comments, etc.) in the header, the Patent Application embeds specific image information, scale information, in a dedicated location of a header of a digital raster image that unlocks additional functional possibilities. See ¶31 of 132 Dec.

Also, Rappaport does not teach embedding scale in a digital raster file. Rappaport teaches putting information in the header of a generic computer file. The difference between a header of a generic computer file and a header of a digital raster image are significant and well-known. A header of a generic computer file has a fixed role with limited capacity. A generic file header has 5-10 slots/fields and is used to hold limited information such as metadata. The file header of a generic computer file is not accessed for reasons other than obtaining transmission information. (See Rappaport [0010], [0095], [0116] and [0124].) Also, a generic electronic file header can only be read and properly processed if it is in a proprietary or standard file exchange format. Rappaport does not teach a generic electronic file header that is in a proprietary or standard file exchange format. See ¶32 of 132 Dec.

In contrast, the Patent Application employs the header of a raster file. The digital raster header is known to have an exponentially larger capacity than the limited capacity of a generic file header to hold information. A header of the digital raster image can have an unlimited number of Private tiff Tags that can be expanded all the way up to the TIFF file size limit of 4 GB at 8 bytes per tag. Also, computer systems are designed to intelligently process the information retained in the header of the TIFF file, a non-proprietary interchange format. This format can be universally read and processed without limitation. The act of embedding scale information in a file header securely stores the scale information in the raster file. Thus, Rappaport's teaching of placing metadata in a header of a generic computer file does not equate to or render obvious the embedding of scale in a header of a digital raster image. See ¶33 of 132 Dec.

As for the assertion in the Office Action that scale could be put in the header via the notes subsection, this is not viable. It is known that the notes subsection of the header has limited capacity and is used for general purposes such as to retain metadata and other limited information. (See Rappaport [0116] and [0124].) Rappaport clearly teaches using the "notes" to retain metadata such as comments. See for example the "notes" line in Fig.

3 of Rappaport which states "Notes: Location file for Blacksburg Office." This comment placed in the notes subsection of Fig. 3 is nothing more than metadata. Furthermore, a computer system cannot intelligently process information from the notes subsection of a computer file; rather the computer only is able to consume information from the notes subsection as general comments or notes. See ¶34 of 132 Dec.

Rappaport's teaching of inserting metadata or file-identifying information in the notes subsection of a header does not render obvious the embedding of scale information in a dedicated location. A dedicated location in the header of a digital raster image has an address and a location that retains specified information. A computer can intelligently process information stored in a dedicated location. The insertion of comments in the notes subsection is not equal to embedding scale in a dedicated location. Thus, it would not be obvious to insert scale information in the notes subsection of a header as information in the notes subsection is ignored and not processed by a computer. See ¶35 of 132 Dec.

For the reasons stated above, Applicant respectfully submits the combination of Solberg with Rappaport would not be feasible and thus would not render obvious the invention of the Patent Application as claimed.

C. The Claimed Combination Of Rappaport With Solberg Changes The Principle Operation Of Solberg, The Primary Reference, And Renders Solberg Inoperable For Its Intended Purpose

The Office Action finds it would have been obvious to combine Solberg's teaching of manually entering scale with Rappaport's teaching of placing information in the notes subsection. Specifically, the Office Action asserts scale could be placed in the notes subsection of a header of a digital raster image. However, such a combination would change Solberg's principle operation and render Solberg inoperable for producing mathematically accurate 3D vectors. (Solberg-Abstract). See ¶37 of 132 Dec.

Solberg sets scale for the CAD system and this act is accomplished in Step 3.3 ("Set drawing scale"). (Solberg Col. 25 lines 1-14.) The combination suggested in the Office Action would in effect be replacing Solberg's scale setting step (Step 3.3), as scale would now be set using Rappaport. This combination would result in Solberg's CAD

system not being able to read the scale as it is known that CAD systems consume information from the body of the file and not from the header of a file. Thus, the placement of scale in the header of a file would change the principle operation of Solberg's as its Step 3.3 would be replaced. As a result, Solberg would be rendered inoperable for its intended purpose of attaining mathematically accurate 3D vectors. See ¶38 of 132 Dec.

The replacement of Solberg's scale setting step with Rappaport's teaching would further change Solberg's principle operation as Solberg's CAD system would not be able to read scale from the header of a file and thus would have to resort to a default scale. It is known that CAD programs use a default scale of a 1:1 ratio, stored in their own proprietary data store format, to perform mathematical calculations and measurements. The presence of a default scale in CAD programs was demonstrated in the Personal Examiner interview held on July 20, 2009 and also described above. In the CAD demonstration, a true scale measurement of a drawn line was not attained as the CAD program used a default scale. Again, Solberg would not achieve its intended purpose of attaining mathematically accurate vectors. See ¶39 of 132 Dec.

The combination suggested in the Office Action of placing scale in the header of the digital raster image would further change Solberg's principle operation as Solberg would no longer be setting scale for the CAD application. Solberg's Step 3.3 of setting scale in the CAD system is an important and critical step as it is required in order to properly introduce the viewport raster file 124 into the CAD viewport 290. Step 3.3 is also important because the viewpoint raster file image 350 in the viewport 290 serves as a backdrop to the production of the vectors 268. (Solberg Col. 25 line 25- Col. 26 line 14.) If scale is not set using Step 3.3, then here again mathematically accurate vectors could not be produced and ultimately Solberg is rendered inoperable. See ¶40 of 132 Dec.

It should be noted that Solberg's CAD program would not be able to consume information from the header of a file without substantially changing Solberg's principle operation. In order for Solberg's CAD system to access information from a file header the CAD program would require the computer file be in a format that is native to AUTOCAD, such as a binary proprietary format. There are two acceptable formats: a proprietary format and a supported file exchange format. The proprietary format must be

written and read specifically by the CAD application. Solberg does not teach or feasibly suggest modifying CAD applications to support this process. The supported file exchange format is in a .dwg or .dxf format. Solberg does not teach .dwg format and only teaches .dxf as the file name for storing the accurate CAD drawing file. Only the proprietor of the CAD program can change how the CAD system consumes information. Solberg does not teach changing the CAD program to consume information from the header of a file, nor in reality is there any ability/force to change commercially available, proprietary CAD systems. See ¶41 of 132 Dec.

D. Examiner Fails to provide an Apparent Reason with Rational Underpinnings to Combine Solberg with Rappaport

The Office Action asserts the motivation to combine Solberg with Rappaport "is to allow users to instantaneously interpret the measurement value (scale information) and allows one to understand or recall with ease the measurement type, measurement location, and etc." (See Rappaport [0074] and [0070].) See ¶42 of 132 Dec.

The Office Action appears to inaccurately equate Rappaport's term "measurement" to scale. Rappaport uses "measurement" to describe the performance of a network of distributed components (performance metrics) or characteristics of any collection of spatially distributed group of objects. For instance, Rappaport describes measurements with regard to networks such as communication network or a distributed infrastructure network for carrying power, heat, air-conditioning, fluids, and the like or to the physical observation about quality or quantity of objects such as furnishings of a room, quality of paint or inventory of equipment. (Rappaport [0076], [0096] and [0106].) Furthermore, Rappaport does not teach embedding scale. Nowhere in the description of Rappaport's invention is the term "scale" used. Rappaport's single and only use of the term "scale" is made in order to distinguish itself from a prior art reference.[1] See ¶43 of 132 Dec.

Rappaport describes a visual graphical environment where real world objects and

[1] In an electronic word search conducted on Rappaport, the term "scale" was only used once to distinguish a prior art reference from the Rappaport invention. (See Rappaport [0064]).

environments are represented as approximations with no concern for scale or the implications of securing this data. (Rappaport [0070], [0072], [0078] and [0092].) See ¶44 of 132 Dec.

In contrast, the scale described in the Patent Application is a ratio that in part helps calculate spatial and physical measurements that is taken from the paper drawing. For example, scale is known as inches to inches in a document scale. (Patent Application [0032]-[0044].) The difference between "scale", as claimed in the present Patent Application, and the dimension measurements that the scale helps calculate in the present invention and "measurement" as employed in Rappaport are two different and distinguishable terms. See ¶45 of 132 Dec.

Also, the language of Rappaport cited as motivation to combine Solberg and Rappaport, when read does not provide an apparent reason with rational underpinning to combine the two references. See ¶46 of 132 Dec.

User's of Rappaport's invention are able to instantly interpret the performance of a network by viewing cues or "graphical display[s] of measurement data" overlaid on the computer representation of the environmental-raster image. (Rappaport [0057] and [0124].) These icons or text strings overlaid on the raster image give context to the value or location of the measurement displayed on the raster image. See ¶47 of 132 Dec.

In contrast, to providing cues to give context, the Patent Application is calculating a true scale measurement using scale information that is embedded in the header of the raster image. See ¶48 of 132 Dec.

As stated above, the combination would not result in a single digital raster image with scale embedded in a dedicated location of the header of the raster file and true scale measurements could not be calculated therefrom as claimed in claims 1, 6, 10 and 15 of the invention as presently claimed. See ¶49 of 132 Dec.

Also, there is no reason to combine the two references since the combination of the two references would not result in success. As CAD systems do not consume information from the header of any computer file, there would have been any reason to have considered selecting scale information and storing such information in a header of a single digital raster image file. CAD programs store scale information in external library files that can be associated with a CAD file. Furthermore, a large amount of information

is typically stored in the CAD library files, thus it would not be feasible to store all of the library file information in the header of a raster file. See ¶50 of 132 Dec.

In addition, if Rappaport were combined with Solberg, the combination of references would likely result in Rappaport's textual strings and/or graphical icons associated with performance metrics being overlaid on a Solberg's intermediate raster file. Solberg would then, if possible, have to recognize and convert these texts and icons as accomplished in Solberg's later steps 4-7. Such a combination again would not result in the invention claimed in claims 1, 6, 10 and 15 of the Patent Application where a single digital raster image has scale embedded in a dedicated location of the header of the raster file and where true scale measurements are calculated using the embedded scale information. See ¶51 of 132 Dec.

III. SECONDARY CONSIDERATIONS

Since development of the systems and methods set forth in the Patent Application, the Patent Owner has achieved substantial commercial success. The inventions have led to multiple sole source contracts in the United States at county, state, and federal levels. In each case, the contracting vehicles point to a unique technology. Additionally, because no bidding process was utilized in any of the cases, the Patent Owner had to demonstrate that no competitive products or offerings were available. Thus, Applicant respectfully submits the presently claimed invention is unique, novel and non-obvious. See ¶52 of 132 Dec.

Moreover, as a result of the solution provided by the Patent Application, a partnership has been established between the Patent Owner and IBM to market products throughout the world. Due to the commercial success and potential market opportunities for various embodiments set forth in the present Patent Application, it is believed that a unique solution has been developed to satisfy the long felt need for systems and methods that efficiently store accurate scale infrastructure plans in an electronic format. See ¶53 of 132 Dec.

During the development of the systems and methods of the present Patent Application, the industry was aware of and familiar with CAD programs and products. However, CAD programs were not incorporated into the invention of the present Patent

Application as CAD programs typically utilize their own proprietary format making CAD files often not transferable between different systems and programs. (See Exhibits H and I). Another concern with using proprietary formats is the possibility of the owner of that particular format going out of business thus leaving the format unsupported in the future. (See Exhibit I.) The Patent Application overcomes these concerns as it utilizes non-proprietary files with scale information embedded in a header. These non-proprietary raster files are easily transferable between different systems and software programs and readily available for use by a wide variety of different individuals. The files can be opened and the embedded scale information may be quickly accessed following scanning in order to determine true scale measurements. Also, CAD programs were not incorporated into the invention of the present Patent Application as CAD programs store scale information in external library files thereby increasing the likelihood of information loss or disassociation. Accordingly, CAD programs were not considered when developing the presently claimed invention. See ¶54 of 132 Dec.

The Patent Application provides a single phase validation where, by embedding scale of the initial document in the header, measurements can be calculated by directly using the embedded scale information stored in the dedicated location of the header of a file. Thus, measurement results can be validated simply by confirming the accuracy of the scale embedded in the header. In contrast, the prior art inventions require a minimum 3-phase validation. For instance, in the Solberg invention validation can only be performed by a multi-phase validation of the Raster to Vector CAD conversion process. Solberg's multi-phase validation includes storing scale in the CAD file, manually inputting the scale information within the CAD system and finally reviewing the source document. Furthermore, validation of the Solberg method is impossible to perform if the file has been shared and the party does not have access to the source document. See ¶55 of 132 Dec.

The Patent Application provides a secure and efficient means of ensuring accuracy because measurements are calculated by directly using the scale embedded in the file, specifically in the dedicated location of a header of the file. Thus the Present Application ensures the calculation of accurate measurements even after file sharing and distribution. See ¶56 of 132 Dec. Also, the Patent Application provides an immediately

intelligible raster file from which true scale measurement can be calculated. See ¶57 of 132 Dec.

Notably, the present Patent Application and related applications are the only existing solution to quickly, efficiently and accurately produce rendering of blueprints and architectural drawings, viewable precisely to scale. As a result, the Patent Owner is in partnership discussions with CACI International, Inc. a prime federal systems integrator, who has been allocated $34 Million to provide three-dimensional renderings of blueprints and architectural drawings that enhance the Army's ability to ensure comprehensive facilities support and protection. See ¶58 of 132 Dec.

Additionally, the present Patent Application provides a non-proprietary solution that provides several unique benefits over the proprietary CAD systems such as those non-limiting examples of benefits cited above. The resultant non-proprietary file can be distributed and utilized by collaborating agencies, departments, and companies without the need to purchase a CAD system or invest in training and maintaining CAD users and environment. See ¶59 of 132 Dec.

The ability to share and corroborate accurate information quickly is vital to our National Security and Emergency and Disaster Management Centers. There is an urgent and immediate need to quickly and efficiently prepare and respond based on a Common Operating Pictures (COP). The unique capabilities provided by the Patent Application delivers a comprehensive internal situation awareness of the COP which can be used to save lives and protect property. See ¶60 of 132 Dec.

IV. PATENTABILITY OF CERTAIN DEPENDENT CLAIMS

The dependent claims 2, 4, 5, 7-9, 11-14 and 16-20 are believed to be allowable for at least the same reasons that their respective independent Claims 1, 6, 10, and 15 are believed to be allowable as argued and submitted above. Applicant also reaffirms the arguments made in response to the previous Office Actions.

Applicant notes that dependent Claims 19 and 20 were added by the Response filed on June 5, 2008. With regard to dependent claim 19, Applicant agrees that Solberg does not teach and/or suggest calculating area of a drawn shape. The present application claims calculating a true scale measurement of a drawn line or shape based at least in part

on the embedded scale information in said dedicated location of said header of said single file. As stated above, Solberg teaches the creation of mathematically accurate vectors traced over a previously drawn line but not the calculation of a true scale measurement of drawing input. Solberg simply correlates dimension information to a shape. This dimension data that is associated with a line or shape is accessed from the CAD library file for display. Thus, Solberg is neither accessing scale data from a header of a raster image nor utilizing scale data stored in the dedicated location in a header to calculate a true scale measurement of a drawn line or shape. See ¶28 of 132 Dec. Dependent claim 19 ultimately depends from amended independent claim 1 for which arguments of patentability have been provided above. For at least these reasons, it is respectfully asserted that dependent Claim 19 is allowable over Solberg and Rappaport, either taken alone or in combination.

Regarding dependent Claim 20, Applicant again submits that Solberg does not teach "receiving drawing input comprises receiving drawing input in the rendered digital image." Solberg's drawing input shown in Figs. 6-14 teaches that the images of the digital raster image files are imported into the CAD system, thus Solberg does not teach the limitations of claim 20. Moreover, dependent Claim 20 ultimately depends from amended independent Claim 1 for which arguments of patentability have been provided above. For at least these reasons, it is respectfully asserted that dependent Claim 20 is allowable over Solberg.

CONCLUSION

It is believed that each matter raised by the Non-final Office Action has been addressed. Allowance of the claims is respectfully solicited. It is not believed that extensions of time or fees for addition of claims are required beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR §1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 50-2499.

If there are any issues which can be resolved by telephone conference or an Examiner's Amendment, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

Date: August 17, 2009

/Libby Babu Varghese/ .

Libby Babu Varghese
Attorney for Applicant
Reg. No. 51,326
Carter Ledyard & Milburn LLP
2 Wall Street
New York, NY 10005
Telephone No.: (212) 238-8727
Facsimile No.: (212) 732-3232